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Retention of "Peace Support Operations" Tasks During Bosnia Deployment:

A Basis for Refresher Training

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The U.S. Army Research Institute (ARI) examined the 27 tasks trained at the 7th Army Training Command (ATC) for soldiers deploying to Bosnia or Hungary as part of Operation Joint Endeavor. All such newly-learned tasks are known to be subject to forgetting unless they are practiced periodically. There is thus a natural tendency for the percentage of soldiers able to perform these tasks at a "Go" level to decrease over time. The rapidity of the decline in proficiency is dependent upon use (or practice) after original learning and upon known task characteristics. That is, the time course of forgetting for different tasks during periods of non-use is predictable. The purpose of ARI's examination, then, was to offer such predictions for these 27 tasks. It is our hope that these predictions can assist trainers in scheduling refresher training in Bosnia and Hungary, especially for critical tasks easily forgotten.

This report briefly describes the methods used to collect, model, and chart the predictions for task retention. Recommendations on how to apply these findings to a training schedule are also offered. A sample of the predicted task retention curves over a 12-month period of non-use is presented on Page 3. The job aid produced from these data, "Trainer's Guide for Refresher Training -- Operation Joint Endeavor," is shown on Page 4.

The source of the predictions is an empirically-based model developed by ARI researchers and endorsed by the Army Training Board. On the basis of this earlier research, the User's Manual for Predicting Military Task Retention was developed for use throughout the Army. The methods described in this manual were applied to the 27 tasks trained at the 7th ATC, the final preparation for soldiers en route to Bosnia or Hungary.

Data Collection

Data were collected through structured interviews with eight instructors at the 7th ATC between 6-8 February 1996. Each instructor was responsible for a particular task area, and each task area had between two and seven tasks. The instructors interviewed were very familiar with the tasks, having taught them on a daily basis for the previous month. The instructors were interviewed individually, one in each task area. Each interview took between twenty and forty-five minutes, depending on the number of tasks.

An ARI researcher described the purpose of the research and the procedure for the interview. Each task was first discussed in general terms, and then a series of 10 questions were asked. The questions concerned: (1) availability of a job/memory aid while performing the task; (2) quality of the job/memory aid (if available); (3) number of steps to execute the task; (4) requirements for sequencing the steps; (5) built-in feedback for each step; (6) time limits; (7) mental processing demands; (8) number of facts, terms, and rules a soldier must know to perform the task; (9) difficulty of remembering these facts, terms, and rules; and (10) motor control demands (precision of finger, hand, and arm movements).

Model Application

Based on responses to the 10 questions, a point scoring system was applied. For example, if a task had no time limit, 40 points were given; if it had a time limit, but it was easy to achieve, 35 points were given; if the time limit was difficult to achieve, 0 points were given. This point scoring system was derived from previous ARI research. The points for each of the 10 questions were then aggregated, resulting in an overall number of points for each task. From this aggregate number, a task retention curve was computed.

It should be noted that the task ratings were based on the scenario of peace support operations in Bosnia. Under these conditions, the predictions for the retention of a particular task could be somewhat different from that of a wartime scenario. For example, the "Locate a Mine by Probing" task had no time limit in the peace support operations scenario. However, in a high intensity scenario, time might be an important factor. In this latter case, the prediction for retention of the task would be lower, due to a different condition and, thus, a different time standard. Consequently, the findings reported here might not necessarily apply to these tasks in other situations, such as combat.

Predictions

One useful way to present our findings is in terms of retention after a two-month interval of non-use. This two-month interval should be measured relative to the time a soldier last performed the task to standard, either at 7th ATC during the five day train-up period, or in Bosnia or Hungary after a "for real" execution of the task or a refresher training course. Two months was selected because it is here that the divergence between tasks begins to become noticeably pronounced. The trainer's guide presents the tasks, rank ordered by those tasks predicted to be poorly retained, moderately retained, and well retained, as measured by percentage of soldiers in a unit likely to score a "Go."

Three tasks had both an introductory and advanced level. The introductory level served as the "crawl-walk" phase of training. Also, several tasks had the advantage of having a job aid, such as the Rules of Engagement card, available for the soldiers. When such job aids can be referred to just before or during task execution, they are known to enhance task retention. For the tasks with job aids, an additional column provides a prediction of the percentage of soldiers who would receive a "GO" if, for some reason, the tasks were attempted without access to the job aid. The very low predictions, <10%, for some tasks, especially "extraction from minefield," suggest the need to develop job aids here if feasible.

Recommendations

There are several factors to be considered when applying these findings to the scheduling of refresher training. Obviously, the criticality of a task for a particular unit must be a primary consideration. If, for example, "React to Mines" is judged a highly critical task, then it should probably be included in a refresher training schedule, even though it is predicted to be well retained. On the other hand, if a task such as "React to Media" is not judged to be highly critical for a particular unit, then it might be a low priority for refresher training, even though it is predicted to be only moderately retained.

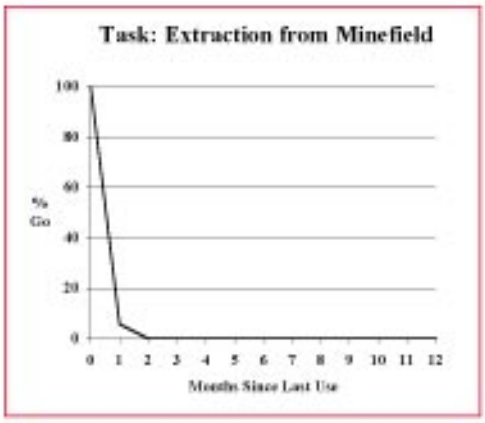
Another consideration is frequency of use. Task retention becomes an issue after periods of non-use. If tasks are being executed correctly on a weekly basis, for example, then there is little opportunity for them to decay. Patterns of use will vary across units and within a particular unit, so this factor must be carefully determined. As the data suggest, task retention can vary greatly after as short a period as two months of non-use. Finally, just because a task is predicted to be performed well does not guarantee that a soldier will remember when or under what conditions it should be performed. Maintaining situational awareness and overcoming complacency are always key ingredients for a successful mission.

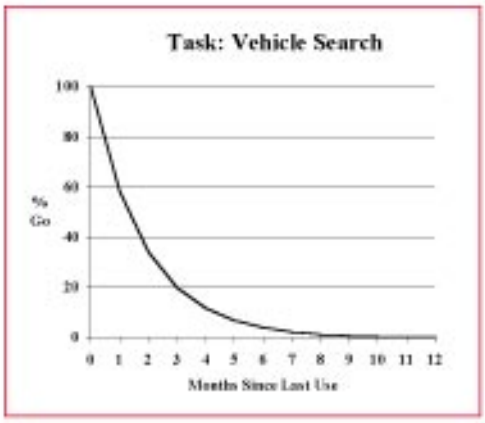
In summary, consider the following when deciding whether a task should be included in refresher training:

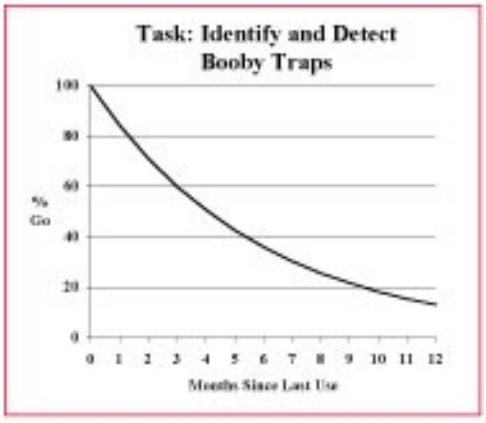
- How critical is the task for your mission?
- Has the task been used periodically during the past two months?
- What is the predicted retention level for the task?

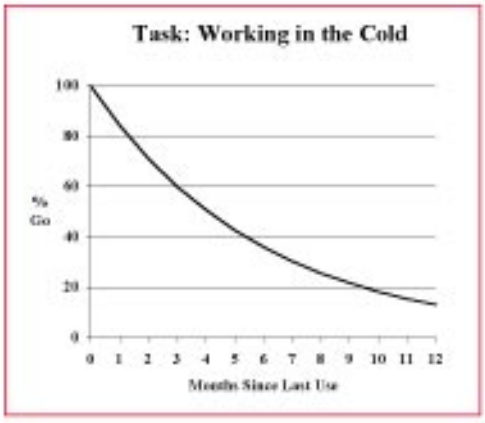
These recommendations are included on the trainer's guide. This guide is being distributed as a 4x6 laminated job aid to Army trainers for Operation Joint Endeavor in the field of operation. If you have comments or questions on this report, contact: Bob Wisher, (703) 617-5540, DSN 767-5540 or Mark Sabol, same w/ extension 5779; e-mail: WISHER (or SABOL) @ ari.fed.us; FAX: (703) 617-3573; U.S. Army Research Institute, 5001 Eisenhower Avenue, Alexandria, VA 22333-5600

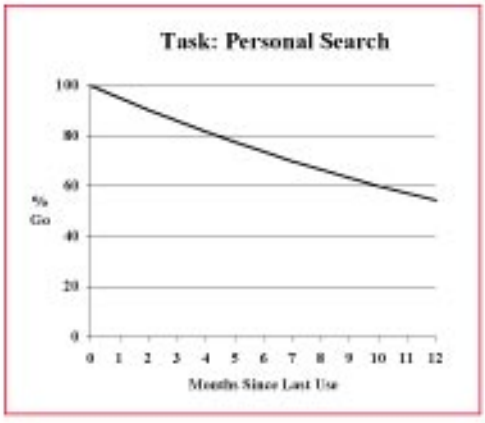
Sample Retention Curves

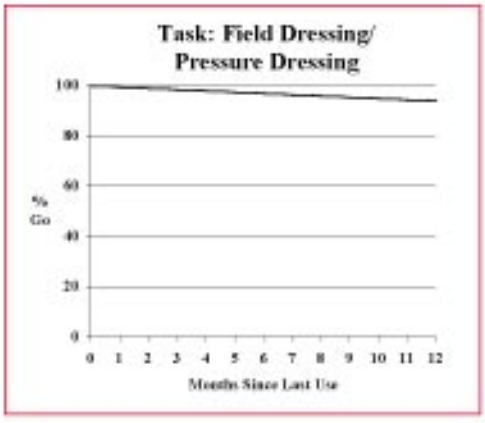












TRAINER'S GUIDE FOR REFRESHER TRAINING
-- OPERATION JOINT ENDEAVOR --

RANKING OF TASK RETENTION
(Task ranked #1 is hardest to remember.)

% Go = percent of soldiers predicted to perform the task at 'Go' level after two months of non-use

Rank	Task	% Go
#1 -	Extraction from Minefield	0 %
2 -	React to Civilian on Battlefield	8 %
3 -	React to Sniper	9 %
4 -	Prevent Shock	18 %
5 -	Carbon Monoxide Inhalation	28 %
6 -	Apply Tourniquet	29 %
7.5 -	React to Indirect Fire	30 %
7.5 -	Winter Driving	30 %
9 -	Vehicle Search	34 %
10 -	Negotiation	36 %
11 -	Rules of Engagement	42 % (27%)
12 -	React to Media	54 %
13 -	V Corps Convoy Mine Strike Drill	56 %
#14 -	Living in the Cold	62 % (48%)
15 -	Identify/Detect Trip Wires	68 %
17 -	Driving Postcheck	71 % (44%)
17 -	Working in the Cold	71 %
17 -	Identify/Detect Booby Traps	71 %
19 -	Sleeping in the Cold	73 %
20 -	Recognize/ React to UXO	75 %
21.5 -	Mine Detection	76 %
21.5 -	Locate a Mine by Probing	76 %
23 -	Driving Precheck	89 % (62%)
24 -	Personal Search	90 % (62%)
25 -	React to Mines	96 % (68%)
26 -	Field Dressing/Pressure Dressing	98 %
27 -	Indications of Mines/Booby Traps	99 % (84%)

NOTE: Tasks with two 'Go' percentages have job aids; percentages in parentheses apply when job aids are not available.

See the reverse side for factors to consider when scheduling these tasks for refresher training.

TRAINER'S GUIDE FOR REFRESHER TRAINING
-- OPERATION JOINT ENDEAVOR --

The following task factors should be considered when establishing priorities for refresher training:

About This Guide

Purpose: General guidance for scheduling refresher training.

Intended Users: Trainers of the stability operations tasks required for soldiers deploying to Bosnia or Hungary.

Origin: *Instructors at 7th ATC, Hohenfels, provided judgments on characteristics of tasks taught there.*

Using methods developed from earlier research, the U.S. Army Research Institute converted these expert judgments into predictions of task retention.

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1. CRITICALITY:

Decide how critical each task is to your particular unit's mission -- give priority to the most critical tasks.

2. RECENCY:

Determine how long it has been since your unit has performed each task -- give priority to tasks not done recently.

3. PREDICTED RETENTION:

Locate the tasks you expect to train within the ranking on the reverse side of this sheet -- give priority to tasks with high ranks (#1 is 'highest').